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Biotechnology Notes

Volume 8 • Number 7

U.S. Department of Agriculture

July/August 1995

Biotechnology Notes, a compilation of agency activities, news events, and upcoming meetings, is prepared for members of the U.S. Department of Agriculture's (USDA) Committee on Biotechnology in Agriculture (CBA) by USDA's Office of Agricultural Biotechnology (OAB).

INSIDE USDA

BIOTECH ADVISORY COMMITTEE MAKES FIVE RECOMMENDATIONS

USDA's Agricultural Biotechnology Research Advisory Committee (ABRAC) made five recommendations at its semi-annual meeting June 26 in Arlington, VA. First, it recommended that the performance standards it had developed for aquatic research should be voluntary and flexible enough to incorporate any future revisions. Second, members recommended that the standards be computerized for user friendliness and wider dissemination. Third, the ABRAC recommended that USDA sponsor a series of Federal/State workshops to introduce the standards to aquatic researchers and State natural resource officials.

Concerning plants, it was recommended that USDA convene a workshop where experts would identify the kinds of data that should be monitored during large-scale plantings of transgenic crops. The data would be made available to commercial producers who may be considering such trials. The final recommendation was that USDA fund a working group to develop scientific principles for those researchers working with transgenic arthropods (insects) who may be considering outdoor studies. These recommendations will be forwarded to the Under Secretary for Research, Education, and Economics for his consideration.

The ABRAC is comprised of 15 experts from outside USDA. They represent universities, industry, research institutes, and environmental groups. Their goal is to provide scientific advice for the Secretary of Agriculture. For a complete listing of current ABRAC members, please turn to page 8.

1995 AWARDS FOR RISK ASSESSMENT RESEARCH

USDA funds grants for biotechnology risk assessment research from a 1 percent set-aside of its biotech research budget. Proposals awarded for 1995 include: "The risk of

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gene flow from sorghum to Johnson-grass;" "Triploids for biological containment: the risk of heteroploid mosaics;" "Risks of gene escape in strawberry: gene flow, hybrid vigor, and introgression;" "Spread and impact of barley yellow dwarf viruses in wild grass populations;" "Recombination between viral RNA and transgenic plant transcripts;" "Capability of recombinant insect viruses for environmental persistence/transport;" "Effect of sequence similarity on recombination frequency in transgenic plants;" "Coat protein gene introgression and virus spread in Cucurbita pepo and C. texana;" "The environmental fate of gene deleted live vaccines for Pseudorabies virus;" and "Recombination between cauliflower mosaic virus and transgenic plants." For more details about the grants, please call Edward Kaleikau at 202-401-1931; E-mail: ekaleikau@reeusda.gov

CORRECTION

Last month's issue of *Biotechnology Notes* included an article about a meeting in Egypt of a panel of experts on biosafety. Terry Medley's title should have read Chairman of the North American Plant Protection Organization's Biotechnology Panel.

NEWS AROUND THE NATION (AND THE WORLD)

This is the sixth in a series of articles profiling biotechnology programs at U.S. colleges and universities. This month we visit Tuskegee University's School of Agriculture in Tuskegee, Alabama.

Tuskegee University is a private, land-grant institution founded in 1881 by Booker T. Washington. It has an excellent track record in training minorities in agriculture and related areas. Tuskegee's biotechnology program is equally well known. The program is housed in the School of Agriculture and Home Economics and focuses on both plants and animals. It has two faculty members, seven postdoctoral scientists, and 10 graduate students.

Plant biotech research is aimed at developing transgenic sweetpotato and peanut plants with improved productivity traits such as disease resistance and enhanced protein quality. Faculty and students use DNA amplification fingerprinting and AFLP techniques to study genetic diversity in the germplasm of both crops. The researchers are also working to identify the DNA markers linked to virus resistance in cowpea. Currently, transgenic sweetpotato plants are being tested hydroponically under a project funded by NASA with the intent of developing food systems for future manned space missions. Tuskegee also plans to conduct field tests next year with herbicide resistant sweetpotatoes.

Animal scientists have developed genomic libraries highly enriched for diverse microsatellite repeats that will allow them to collaboratively establish a first generation linkage map for turkey as part of an ongoing gene mapping effort. Other biotech research programs on campus are found in the School of Veterinary Medicine and the Department of Biology. Several biotechnology courses are also offered with "hands-on" learning and the use of multimedia instruction. To learn more about Tuskegee's biotech programs, please call either C. S. Prakash, Associate Professor, Plant Molecular Genetics, at 334-727-8023 or W. A. Hill, Dean, School of Agriculture and Home Economics, at 334-727-8157.

BIOTECH LAB COURSES BEING OFFERED

The Catholic University of America, Washington, DC, will conduct three courses in biotechnology at Lake Tahoe, NV, October 23-26, 1995. The courses are Recombinant DNA Technology & DNA Sequencing, PCR Techniques & DNA Sequencing, and Molecular Approaches to the Understanding and Diagnosis of Genetic and Infectious Diseases. For details, please call 202-319-6161; Fax: 202-319-4467; E-mail: millerm@cua.edu

NEW TOOLS FOR EXTENSION EDUCATORS

The University of Wisconsin's Biotechnology Center has unveiled new learning materials to help Extension educators and classroom teachers help their audiences answer some of the basic questions about food technology and biotechnology. The materials provide information, historical analyses, and case studies for developing critical thinking skills to help people make personal choices.

The materials include "Biotechnology and Food Leader and Participant Guide," a companion poster entitled "Biotechnology: Tools for Genetic Ingenuity," and a videotape entitled "Biotechnology and Food: A Public Issue for Extension Education." All three resources are available from the Cooperative Extension Publications Office at 608-262-3346.

FAMILY PLANNING ON THE FARM

Iowa State University (ISU) has been awarded a patent for a method of detecting the gene that regulates increased litter size in pigs, according to the April 1995 issue of ISU's *Biotechnology Update*. The discovery may make it possible for top producers to produce 30 or more piglets per sow each year. Swine breeders will be able to test young pigs for the gene and select those with the potential to produce larger litters.

A copy of the estrogen receptor or ESR gene is in every pig, but only those with a specific form of the gene produce larger litters. The ESR gene was first found in pigs imported to the university from China in 1989. Chinese pigs are known for their reproductive ability and disease resistance.

The patent is jointly held by the ISU Foundation and the Biotechnology Research and Development Corp. of Peoria, IL. The method is licensed to Pig Improvement Co. Inc. of Franklin, KY.

TRIGGER HAPPY GENES

Researchers at the international center for maize in Mexico are optimistic about using the gene gun to endow tropical maize with useful traits such as insect resistance, according the April issue of *CGIAR News*. Helium gas propels minute "bullets" of DNA-coated dust particles into maize cells. The cells are then cultured into whole, viable maize plants which express the particular trait associated with the new DNA.

The DNA that confers insect resistance is from a soil bacterium which produces a toxin that is deadly when swallowed by certain insects but has no known negative effects on humans, other mammals, or even other insects. Seed from the genetically resistant maize could be delivered to those farmers in developing countries who cannot afford to invest in additional labor or more costly inputs. To learn more about the project, please write to CIMMYT, Lisboa 27, P.O. Box 6-641, 06600 Mexico, D.F. Mexico.

EU CALLS FOR PROPOSALS

The European Union (EU) is inviting proposals for projects in the field of genetic resources in agriculture. At least two independent participants located in two separate EU states must contribute to each project. Each proposal must have a specific focus concentrating on a single group of plants or animals. Priority will be given to those species that are expected to become economically significant in agriculture, horticulture, and forestry.

For further information, including an information pack, please write to CEC DG VI/F/II, Loi 120 6/238, rue de la Loi 200, B-1049 Brussels, Belgium; or send a fax to +32 2 296 3029; E-mail: R.hardwicke@mhsg.cec.rtt.be

IN CASE YOU WEREN'T THERE

■ About 30 experts in animal biotechnology and ethics convened at the North Carolina Biotechnology Center in Research Triangle Park, June 5-6, to share thoughts at a conference entitled "The Brave New World of Animal Biotechnology: Can Ethics Meet Reality?" After discussing ethics and the science of transgenic animals, participants delved into the scientific, ethical, and commercial implications of transgenic fish, mice, sheep, goats, cows, pigs, and animal transplantation. Proceedings will be prepared. For more details about the meeting, please contact Steve Burke at 919-541-9366; Fax: 919-990-9544.

■ "The process of genetic improvement is the backbone of agriculture and the foundation of our ability to feed and clothe a growing world population," said Alvin Young, Director of USDA's Office of Agricultural Biotechnology and keynote speaker at the dedication of the Minnesota Food Animal Biotechnology Center, June 23, in St. Paul, MN. The Center was established by the University of Minnesota for the purpose of merging molecular biology with production systems for improved health and growth of food animals. Both corporate and academic researchers will be able to use the Center and collaborate on projects. For more information, please call 612-624-2700; Fax: 612-624-7284.

NEW PUBLICATIONS

■ *Biotechnological Applications of Plant Cultures*. Edited by P. D. Shargool and T. T. Ngo. Published by CRC Press, Inc. Boca Raton, FL. To order, please call 407-994-0555.

■ *Carbohydrate Modifications in Antisense Research*. Edited by Y. S. Sanghvi and P. D. Cook. Published by the American Chemical Society, Washington, DC. 1994. To order, please call 1-800-ACS-5558.

■ *International Initiatives in Biotechnology for Developing Country Agriculture: Promises and Problems*, by C. Brenner and J. Komen. Published by OECD. Paris, France. 1994. To receive a copy, please ask for technical paper number 100 and write to OECD Development Centre, 94 rue Chardon Lagache, 75016 Paris, France.

■ *Biosafety for Sustainable Agriculture: Sharing Biotechnology Regulatory Experiences of the Western Hemisphere*, by A. F. Krattiger and A. Rosemarin. 1994. Publication ISBN 91-88116-972. To order, please call +41-22-789-1311; Fax: +41-22-789-2538; E-mail: anatole@sc2a.unige.ch

■ "Biotechnology Information Series: Insect-Resistant Crops Through Genetic Engineering." Prepared by the Cooperative Extension Service and USDA. January 1995. To receive a copy, please call 515-294-5247.

■ *Feeding and Greening the World: The Role of International Agricultural Research*, by D. Tribe. Published by CAB International, Wallingford, UK. 1995. To order, please write to CAB International, Wallingford, Oxon OX10 8DE, UK.

■ "Science, Technology, and Democracy: Research on Issues of Governance and Change." Prepared for the National Science Foundation. 1995. To receive a copy, please send a request by fax to USDA/OAB at 202-720-5336.

UPCOMING MEETINGS

July 29-Aug. 2: Annual Meeting of the American Society of Plant Physiologists. Charlotte, NC. Call Sharon Kelly at 301-251-0560; Fax: 301-279-2996; E-mail: skelly@aspp.org

July 31-Aug. 4: Course on Fermentation Technology. Massachusetts Institute of Technology. Cambridge, MA. For details, please call Arnold Demain at 617-253-1711; Fax: 617-253-8550; E-mail: demain@mit.edu

Aug. 6-11: Annual Meeting of the Society for Industrial Microbiology. San Jose, CA. Call 703-691-3357.

Aug. 24-25: Biotech Patent Forum. To be held the first day in Rockville, MD and the second day in Washington, DC. Sponsored by the American Type Culture Collection. For more details, please call 301-231-5566.

Sept. 13-14: The European Biotechnology Symposium '95. Amsterdam, The Netherlands. For details, please call 301-652-3072; Fax: 301-652-4951.

Oct. 1-4: International Symposium on "Engineering Plants for Commercial Products/Applications." Lexington, KY. Sponsored by the University of Kentucky. For details, please call 606-257-3929; Fax: 606-323-1053; E-mail: monica.stoch@ukwang.uky.edu

Oct. 10-12: BioTechnica. International trade fair for biotechnology. Hannover, Germany. Call 416-364-5352; Fax: 416-364-6557.

Oct. 16-20: Biotechnology Colloquium. Saskatoon, Saskatchewan, Canada. The colloquium is part of the North American Plant Protection Organization Annual Meeting. Sponsors include Agriculture and Agri-Food Canada and Ag-West Biotech Inc. For more details, please call Jane Thibert at 613-952-8000; Fax: 613-952-0809.

Oct. 23-25: BioWest '95. San Francisco, CA. Sponsored by BioConferences International Inc. Call 301-652-3072; Fax: 301-652-4951.

Oct. 25-28: "Louis Pasteur and Industry in the 21st Century." Marnes-la-Coquette, France. For details, please write to Institut Pasteur, Anne Bellod, 28 rue de Dr Roux, 75724, Paris Cedex 15; or call 33-1-4061-3380; Fax: 33-1-4061-3381.

Nov. 13-15: Pacific Rim University/Industry Technology Transfer Conference. Los Angeles, CA. Sponsored by Technology Transfer Conferences Inc. For details, please call 615-366-0679; Fax: 615-366-0695.

ABRAC MEMBERSHIP

Veterinary/Animal Science: James Lauderdale, The Upjohn Company; Fernando Osorio, University of Nebraska; Anne Kapuscinski, University of Minnesota

Plant Science: Walter Hill, Tuskegee University; Roy Fuchs, Monsanto; Ronald Sederoff, North Carolina State University; H. Alan Wood, Boyce Thompson Institute for Plant Research

Ecology/Environmental Science: Deborah Letourneau, University of California; James Tiedje, Michigan State University

Environmental/Public Policy: Walter Reid, World Resources Institute

Biotechnology Law/Regulation: Stanley Pierce, Rivkin, Radler & Kremer, Boca Raton, FL

Bioethics: Paul Thompson, Yale University;

Entomology: Pamela Marrone, Agra Quest, Davis, CA

Food Science/Nutrition Policy: Robin Woo, Georgetown University

Microbiology/Bioprocessing: Rudy Wodzinski, University of Central Florida

Executive Secretary: Alvin Young, USDA

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